

31. The pipeline of claim 21 wherein said modifier comprised epoxy or epoxides.

32. A pipeline comprising pipe with an insulating conglomerate therearound, wherein said conglomerate comprises a bituminous composition that comprises a modifier that chemically reacts with the bitumen to enhance its dimensional stability at the operating temperature and loads imposed by the pipeline.

33. The pipeline of claim 32 wherein said composition is the main contributor to the thermal resistance of said pipeline.

34. A pipeline comprising pipe with an insulating conglomerate therearound, wherein said conglomerate comprises a bituminous composition, and wherein said pipeline comprises mechanical means for restraining said pipe from sinking through said composition.

35. The pipeline of claim 34 wherein bituminous compositions are the main contributor to the thermal resistance to heat transfer between said pipe and the environment.

36. The pipeline of claim 34 wherein said mechanical means is a connection between said pipe and a cool stratum of a bituminous composition.

19 37. The pipeline of claim 34 wherein said mechanical connection comprises at least one of a plurality of insulating layers at least 3 mm thick.

38. The pipeline of claim 37 wherein one of said layers comprises a porous insulating material.

39. A pipeline group comprising at least one pipeline

inside a sleeve with a bituminous composition in the space between said pipeline and said sleeve.

40. The pipeline group of claim 39, wherein said sleeve is held in a fixed position relative to said pipelines by a mechanical connection between said sleeve and said pipelines.

41. The pipeline group of claim 40 wherein said mechanical connection comprises wood.

42. The pipeline group of claim 39 wherein said sleeve comprises a cool stratum of a bituminous composition.

43. The pipeline group of claim 39 wherein said bituminous composition comprises particles of hard bitumen.

44. The pipeline of claim 43 wherein said composition comprises oil or liquid hydrocarbons solidified to a bituminous tar.

45. The pipeline of claim 43 wherein said bituminous composition comprises water.

46. The pipeline of claim 39 wherein said bituminous composition comprises a solidified mixture of Portland cement, asphalt, surfactants and water.

47. A pipeline comprising pipe with a bituminous composition therearound wherein said bituminous composition is formulated so that the pipe will sink through said composition to an eccentric position in service when the pipeline has reached its operating temperature.

48. A plurality of pipelines surrounded by, and consolidated in an insulating conglomerate comprising a

bituminous composition.

49. A pipeline group comprising at least one fluid carrier pipe and at least one heating element, wherein said group of pipes and heating element is surrounded and insulated from the environment by a bituminous composition.

50. A pipeline comprising:

A) a plurality of pipe sections joined at their ends and covered with insulation except near said joined ends, wherein said insulation comprises a non-bituminous insulating layer covered by a layer comprising a bituminous composition.

B) a field-applied layer of a bituminous composition that covers and insulates the joined ends of said pipe and is fused to said outer bituminous layer described in A), thereby forming a continuous bituminous layer along the length of said pipeline.

51. A pipeline made from flexible pipe comprising a plurality of layers wherein at least one of said layers comprises a bituminous composition.

REMARKS

Original claims 1-20 have been recast as new claims 21-51. Support for the new claims is set out below.

NEW CLAIMS

REFERENCE

21 See page 15 line 34 to page 16 line 3, page 4 lines 17 to 22, page 5 line 22 to 29 and original claims 8 to 12.

22 See page 8 line 33 to page 9 line 1, page 16 line 2 to 4, and original claims 8 to 12.